What is claimed is:

1. An image processing method wherein an original image is quantized into n-levels and outputted, said method comprising the steps of:

ranking the respective pixels in an area according to the value of the image data of said pixels, said area being a specific area (hereinafter referred to as scanning window) in an original image data containing an object pixel, pixels around said object pixels and input pixels and said ranking effected in said scanning window,

level division to extract the pixels belonging to the same division levels as at the time when the respective re-allocated pixels and said inputted image data are divided in (n - 1) levels in said scanning window,

calculating, by levels, an allocation number or quotient and residual by working out the sum of re-allocation values or the sum of image data of said respective level divided pixels, said quotient and residual obtained when said re-allocation value sum is divided by the specific value,

re-allocating, by levels, said specific values and said residuals in said allocation number according to said rank order, and

multi-leveling and outputting the sum of re-allocation values at the position of said object pixel.

2. The image processing method as defined in claim 1 wherein in said level division, said inputted image data is divided into (n - 1) levels and placed in the scanning windows for respective levels, in addition to the respective pixels already re-allocated in the scanning windows for respective levels.

3. The image processing method as defined in claim 1 wherein in said level division, after said input image data are put in the sum image data, by levels, of the respective pixels re-allocated in said scanning window, the data in the scanning window are divided in (n - 1) levels.

4. The image processing method as defined in claim 3 wherein a level synthesis step is interposed before said level division, said level synthesis step being for adding up the output of said re-allocation by levels by pixels on the respective levels to acquire the sums thereof by pixels.

5. The image processing method as defined in claim 1 wherein, based on the input image data, level for the (n-1)-level-divided image data of original image belonging to the scanning window is decided on, the input image data as well as the respective pixels for said level, which are already re-allocated in said scanning windows for the respective levels, are extracted.

6. The image processing method as defined in any of claims 2, 3 and 5 wherein in said level division, image data belonging to the range of the object division level is given a value obtained by subtracting the maximum value on the level immediately below from said image data; image data not smaller than the maximum value of the object division level is given the maximum value of the object division level; and image data not higher than the minimum value of the object division level is given "0".

7. The image processing method as defined in any of claims 2, 3

and 5 wherein in said level division, image data belonging to the range of the division level of the processing object is left as it is, and image data outside the range of the division level of the processing object is given "0".

8. The image processing method as defined in claim 2 or 5 wherein after calculating the sum of data at the object pixels of the respective levels, said multi-leveling step multi-valuates said sum.

9. The image processing method as defined in claim 4 wherein said multi-leveling step multi-valuates the sum of image data at the object pixels of the respective levels obtained from said level synthesis step.

10. The image processing method as defined in claim 1 wherein said specific number n is changed at will.

11. The image processing method as defined in claim 1 wherein said specific value is the range between the divided levels.

12. The image processing method as defined in claim 1 wherein said re-allocation step adds an error to the re-allocation value sum of one of the division levels in the subsequent processing, said error obtained when the re-allocation value at the position of said object pixel and the re-allocation value at said object pixel are quantized into n-levels.

13. The image processing method as defined in claim 12 wherein said re-allocation value sum of one of the division levels is the sum of the re-allocation values of the divided levels of the pixel having the maximum level in said scanning window.

14. An image processing method wherein an original image is quantized into n-levels and outputted, said method provided with switchover arrangements to choose between two different re-allocation ways of getting re-allocation values and a multi-leveling step of multi-leveling the output of said switchover arrangements, and one of said two different re-allocation ways comprising the steps of:

ranking the respective pixels in a scanning window of an original image, said ranking effected in said scanning window according to the value of the image data of said pixels, and said scanning window containing an object pixel, pixels around said object pixels and input pixels,

level division to extract the pixels belonging to the same division levels as at the time when the respective pixels already re-allocated in said scanning window in the preceding processing and said input image data are divided in (n - 1) levels,

calculating, by levels, the allocation number or quotient and residual by working out the sum of re-allocation values or the sum of image data of said respective level divided pixels, said quotient and residual obtained when said re-allocation value sum is divided by a specific value,

re-allocating, by levels, said specific values and said residuals in said allocation number according to said rank order, and

level synthesis to work out the sum of the respective pixels re-allocated by levels in said processing, and

the other of said two re-allocation ways comprising the steps of:

said ranking that is provided in the first re-allocation way,

calculating the allocation number or quotient and residual by

working out the sum of re-allocation values or the sum of image data of the respective pixels already re-allocated in said scanning window in the previous processing and said input pixel, said quotient and residual obtained when said re-allocation value sum is divided by a specific value, and

re-allocating said specific values and said residuals in the allocation number according to said rank order.

15. The image processing method as defined in claim 1 or claim 14, said method comprising the steps of:

ranking correction to find neighborhood correction quantity proportional to the mean value of the ranking correction quantity of pixels in a specific number in said neighborhood on the basis of the ranking correction quantity of pixels in the specific number in the neighborhood of the pixels at the position of the object pixel and to generate a new ranking correction quantity to which are added the difference between the mean value and the multi-leveled data of the object pixel obtained from said multi-leveling step and said mean value, and

ranking image data of the object pixel after correcting said image data of the object image on the basis of said neighborhood correction quantity, said image data of the object image contained in the scanning window of the original image

16. The image processing method as defined in claim 15 wherein said neighborhood correction quantity is controlled by external signals.

17. An image processing apparatus wherein an original image is quantized into n-levels and outputted, said apparatus comprising:

ranking means for ranking the respective pixels in said scanning window of an original image according to the value of the image data of said pixels, said scanning window containing an object pixel, pixels around said object pixels and inputted pixels, and ranking effected in said scanning window,

level division means for extracting the pixels belonging to the same division levels as at the time when the respective pixels already re-allocated in said scanning window in the preceding processing and said input image data are divided in (n - 1) levels,

means for calculation of allocation values by levels for calculating the sum of re-allocation values or the sum of image data of said respective level divided pixels to acquire the allocation number or quotient and residual obtained when said re-allocation value sum is divided by a specific value,

means for re-allocation by levels for re-allocating, by levels, said specific values and said residuals in said allocation number according to said rank order, and

multi-leveling means for n-leveling and outputting the sum of re-allocation values at the position of said object pixel.

18. The image processing apparatus as defined in claim 17 wherein said level division means divides said input image data in (n - 1) levels and places the values obtained in the scanning windows for the respective levels, in addition to the respective pixels already re-allocated in the scanning windows for the respective levels.

19. The image processing apparatus as defined in claim 17 wherein after putting said input image data in the image data of the sum, by levels,

of the respective pixels re-allocated in said scanning window, said level division means divides the data in the scanning window in (n - 1) levels.

20. The image processing apparatus as defined in claim 19 wherein level synthesis means is interposed before level division means, said level synthesis means being for adding up the outputs of said storage means for re-allocation by levels by pixels on the respective levels and acquiring the sum thereof.

21. The image processing apparatus as defined in claim 17 wherein, based on the input image data, level for the (n-1)-level-divided image data of original image belonging to the scanning window is decided on, the input image data as well s the respective pixels for said level, which are already re-allocated in said scanning windows for the respective levels, are extracted.

22. The image processing apparatus as defined in any of claims 18, 19 and 21 wherein said level division means gives a value obtained by subtracting the maximum value of the level immediately below from said image data to the image data belonging to the range of the division level, the maximum value of the object division level to the image data not smaller than the maximum value of the object division level and "0" to the image data not larger than the minimum value of the object division level.

23. The image processing apparatus as defined in any of claims 18, 19 and 21 wherein said level division means leaves the image data belonging to the range of the object division level as they are and gives "0" to the image data outside the range of the object division level.

24. The image processing apparatus as defined in claim 18 or 21 wherein said multi-leveling means calculates the sum of data for the object pixels of the respective levels and multi-valuates said sum.

25. The image processing apparatus as defined in claim 20 wherein said multi-leveling means acquires from said level synthesis means the sum of data for the object pixels of the respective levels and multi-valuates said sum.

26. The image processing apparatus as defined in claim 17, said apparatus comprising level control means which permits setting said specific number n according to the directions of the user or a higher level direction means, and

wherein said level division means, means for calculation of re-allocation values and re-allocation means perform specific processings on the basis of specific number n.

27. The image processing apparatus as defined in claim 17 wherein said specific value is the range between the divided levels.

28. The image processing apparatus as defined in claim 17 wherein said re-allocation means adds an error to the sum of re-allocation values of one of the division levels in the subsequent processing, said error obtained by multi-leveling means when the re-allocation value at the position of said object pixel and the re-allocation value at said object pixel are n-multi-leveled.

29. The image processing apparatus as defined in claim 28 wherein one of said division levels is the maximum level in said scanning window.

30. An image processing apparatus wherein an original image is quantized into n-levels and outputted, said apparatus provided with switchover means for switching re-allocation values outputted from two different re-allocation means and multi-leveling means for multi-leveling the outputs of said switchover means, one of said re-allocation means comprising:

ranking means for ranking the respective pixels in said scanning window of the original image, said ranking effected in said scanning window according to the value of the image data of said pixels, and said scanning window containing an object pixel, pixels around said object pixels and input pixels,

level division means for extracting the pixels belonging to the same division levels as levels at the time when the respective pixels already re-allocated in said scanning window in the preceding processing and said input image data are divided in (n - 1) levels,

means for calculation of allocation values by levels for calculating, by levels, the sum of re-allocation values or the sum of image data of said respective level divided pixels and acquiring the allocation number or quotient and residual obtained when said re-allocation value sum is divided by a specific value,

means for re-allocation by levels for re-allocating, by levels, said specific values and said residuals in said allocation number according to said rank order, and

level synthesis means for acquiring the sum of the respective pixels re-allocated by levels in said processing, and

the other of said two re-allocation means comprising:

said ranking means provided in the first re-allocation means,

means for calculation of re-allocation values for calculating the sum of re-allocation values or the sum of image data of the respective pixels re-allocated in said scanning window in the preceding processing and of said input pixels and acquiring the allocation number or quotient and residual obtained when said re-allocation value sum is divided by a specific value, and

re-allocation means for re-allocating said specific values and said residuals in the allocation number according to said rank order.

31. The image processing apparatus as defined in claim 17 or 30, said apparatus comprising:

ranking correction means for finding a neighborhood correction quantity proportional to the mean value of the ranking correction quantity of pixels in a specific number in the neighborhood of the pixels at the position of the object pixel on the basis of the ranking correction quantity of pixels in the specific number in said neighborhood and generating a new ranking correction quantity to which are added the difference between a mean value and the multi-leveled data of the object pixel outputted from said multi-leveling means, said mean value being the mean value of ranking correction quantities of pixels in a specific number in said neighborhood, and

ranking means for ranking object pixels after correcting image data of the object pixels on the basis of said neighborhood correction quantity, said image data of the object image contained in the scanning window of the original image.

32. The image processing apparatus as defined in claim 31 wherein said neighborhood correction quantity can be controlled by external signals.